



West Michigan

Transportation Operations Center



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FISCAL YEAR 2011 ANNUAL REPORT

There are close to 6 billion Vehicle Miles Travelled (VMT) annually on state trunklines in the Michigan Department of Transportation (MDOT) Grand Region including almost 400 million VMT by commercial vehicles. The West Michigan Transportation Operations Center's (WMTOC) mission is to help each of those miles of travel be as safe, smooth, and efficient as possible.

The WMTOC and its many partners want you to get to work, school, dance practices, the next delivery on your route, hockey games, dinner with friends, and especially, home at the end of your day, safe and sound.

While our core coverage focuses on the greater Grand Rapids area, we have expanded our infrastructure, partnerships and services into parts of Ottawa and Muskegon counties, and are now providing incident and travel time information for MDOT's Mi Drive Web site for the eight counties of the Grand Region.

This year, we also broadened our coverage to include non-freeway routes, such as 28th Street (M-11) and Alpine Avenue (M-37). These are key commercial routes in the area. This coverage provides for better coordination between freeway and non-freeway traffic management and compliments our interaction with the traffic signals operations performed by the City of Grand Rapids Traffic Safety.

The WMTOC partners with police agencies, fire departments, other first responders, emergency dispatch centers, MDOT staff, city and county staff for traffic incident management. Information flowing to and from these partners allows everyone to advance the mission of improving safety, mobility, and economy for the residents, businesses, and visitors to west Michigan. Drive safely!

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This annual report provides information regarding the services provided by the WMTOC and a snapshot of some of our data from 2011. If you are interested in more detailed performance reports, or other data from the WMTOC, please feel free to contact me.



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Traveler Information

ESSENTIAL TRAVELER INFORMATION FOR WEST MICHIGAN MOTORISTS

Key 2011 Accomplishments:

- Travel times were displayed 24 hours a day on DMS leading into the Grand Rapids and Grand Haven areas
- Law enforcement and public health agencies were supported through public safety messages, AMBER Alerts, and Clean Air Action Day messages on DMS
- Incident locations were highlighted on the Mi Drive Web site for high-impact closures

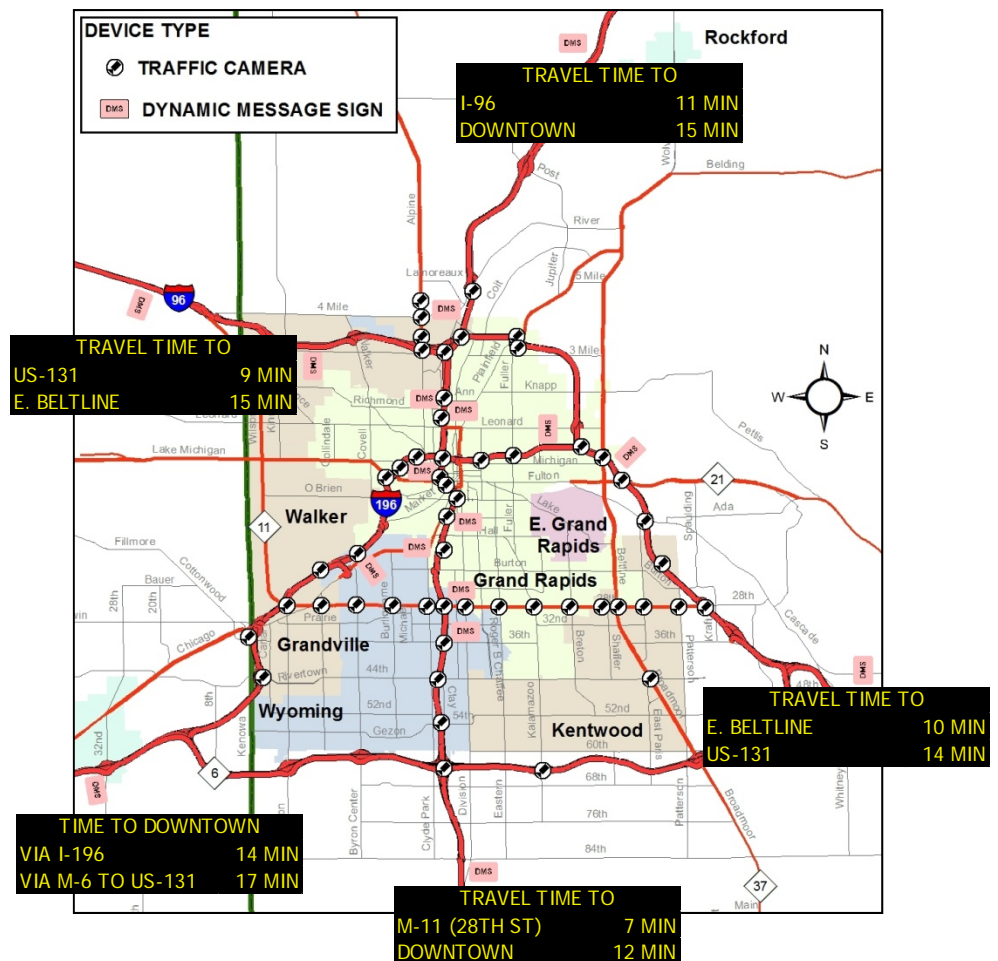
Travel Times

Since 2010, the West Michigan Transportation Operations Center (WMTOC) has displayed travel times on six dynamic message signs (DMS) on routes leading into the Grand Rapids area. The location of the DMS allow motorists to make informed route decisions based on the posted travel times.

In 2011, the WMTOC began displaying travel times 24 hours a day in order to provide traveler information regardless of when motorists are on the road. The travel times are based on real-time data and are automatically updated by the software every five minutes in order to give the most up-to-date travel information to motorists.

Congestion and Weather

The WMTOC utilizes DMS throughout the Grand Rapids and Muskegon areas to inform motorists of congestion and weather conditions when roadways are affected. Based on the DMS messages, motorists can choose a route that avoids congestion, thus minimizing driver delay and fuel consumption due to idling in traffic.



When motorists are aware of weather conditions that affect the roadway, they can reduce their speed accordingly, reducing the likelihood of a crash and increasing safety on the roadway. In FY 2011, 846 congestion and 1,337 weather messages were posted to the DMS.



TRAVELER INFORMATION

DMS

DMS are the most visible Intelligent Transportation Systems (ITS) devices to motorists. TOC operators utilize the DMS to inform motorists about special events, construction, congestion, crashes, and weather-related impacts.

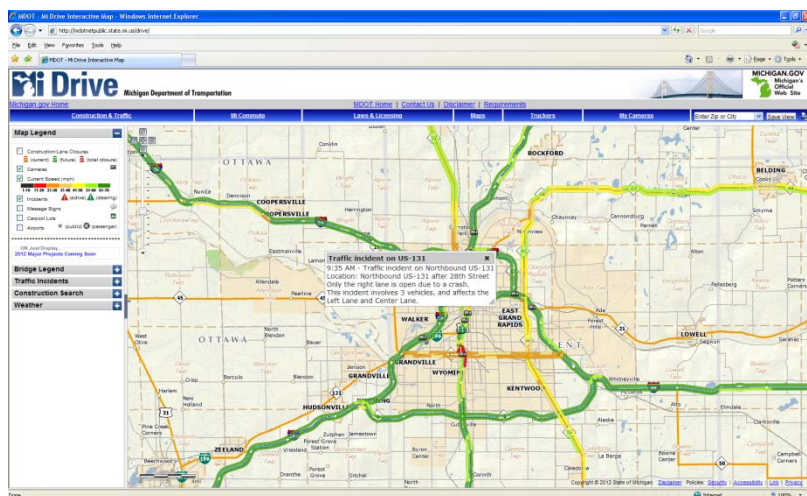
Mi Drive

The Mi Drive Web site (www.michigan.gov/drive) provides the general public with access to traffic camera views and also provides information on average vehicle speeds, construction activity, and major incident locations.

TOC operators post information about high-impact incidents to the Mi Drive Web site, giving the general public information they can use to plan their routes before they head out to area roadways.

To replace a cumbersome e-mail contact list, the WMTOC changed to a Listserv system for notifying stakeholders of incidents on area roadways. The Listserv allows individuals to manage their own subscriptions. To sign up for the Listserv, visit <http://1.usa.gov/qZzuHo>.

The Mi Drive Web site was upgraded in 2011 to show the status of the US-31 bascule bridge in Grand Haven. Web site users can also click an icon on the map to determine scheduled opening times.



Traffic Cameras

TOC operators monitor 57 traffic cameras throughout the Grand Rapids and Grand Haven areas providing visual coverage of approximately 25 miles of area freeways.

The cameras are used to detect and provide operational support for incidents that may adversely impact travel on the freeways. By having visual coverage of the area freeways, TOC operators can provide accurate information quickly to first responders and motorists, decreasing incident clearance times and secondary crashes.

National Weather Service (NWS)

The NWS and WMTOC have partnered in order to provide the best weather and road condition information possible to motorists, both before and during their commutes.

Broadcast Media

Camera images are shared directly with local television news media for use during broadcasts. The media has their choice of camera views and TOC operators provide certain camera views on request, if possible. Television and radio broadcasts are a method to present up-to-date traveler information to motorists and the general public.

Social Media

TOC operators regularly provide up-to-date traveler information to the MDOT Grand Region communications representative. This information is then passed on to the general public through Facebook and Twitter. Currently, over 2,800 people "like" MDOT on Facebook and over 1,800 people follow @MDOT_West on Twitter.

Incident Management

PROVIDING VITAL INFORMATION AND COORDINATION FOR INCIDENT RESPONSE

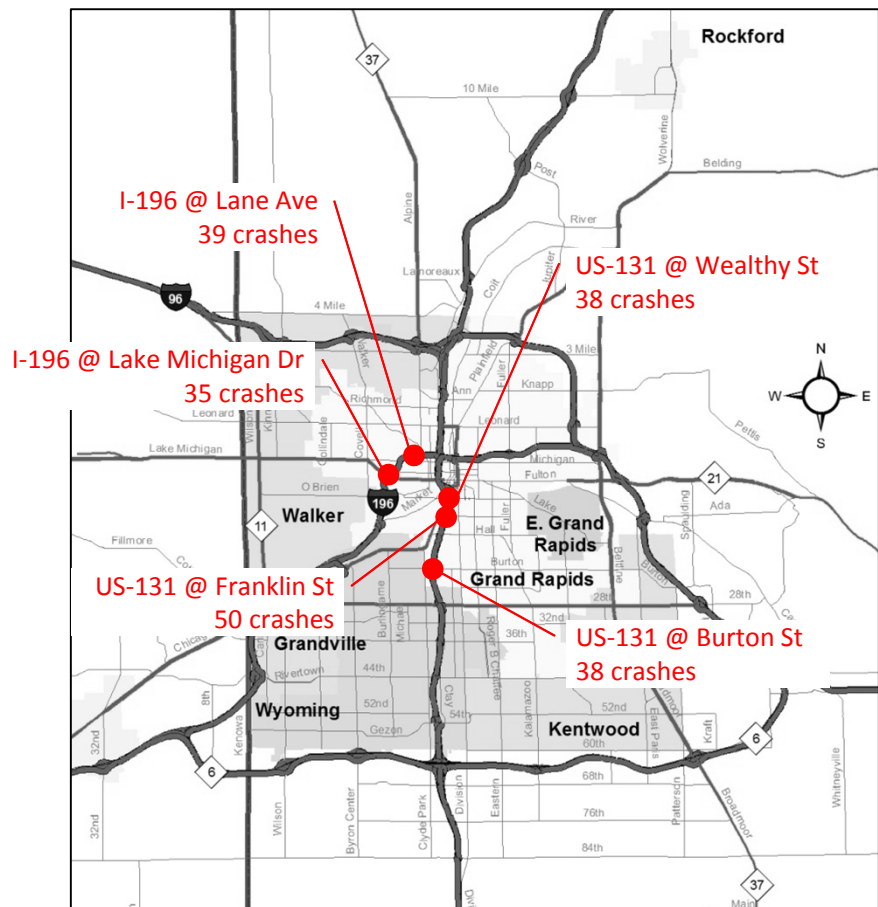
Key 2011 Accomplishments:

- Nearly 1,100 unplanned incidents were supported by WMTOC operations
- Utility-2 was deployed as a joint effort between MDOT, Grand Rapids Fire Department, Kent County Road Commission and Michigan State Police

WMTOC Incident Response

WMTOC operations focus on MDOT's goals associated with incident management, crash reduction, customer information, and congestion reduction. To help meet these goals, WMTOC operations monitor 25 miles of Grand Rapids and Grand Haven-area freeway with traffic surveillance cameras and post messages on DMS 14 hours a day on weekdays, and eight hours a day on weekends.

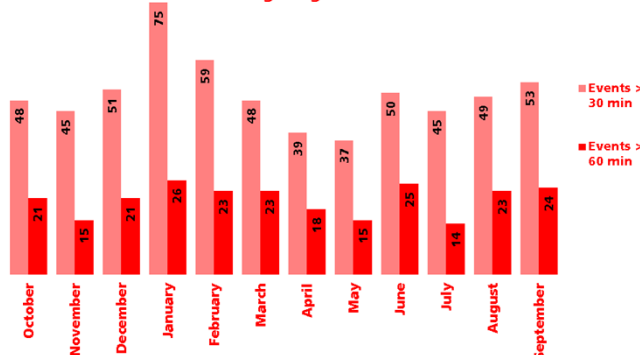
The WMTOC reports on incident duration for longer-term incidents, as shown in the chart below. By working toward reducing event duration through the use of the ITS network of devices, the WMTOC also can reduce the occurrences of secondary incidents.



Most Active Hot Spots

The freeway areas with the highest frequency of crashes are commonly called "hot spots." Hot spot locations receive added attention from TOC operators, and hot spot data is used in studies of these areas. Hot spot locations in Grand Rapids for FY 2011 are shown on the map above.

FY 2011 Events Lasting Longer than 30 & 60 Minutes



INCIDENT MANAGEMENT

Multi-Agency Coordination

When incidents occur on the freeway, several different agencies may be called upon, depending on the location and severity of the incident.

In early August, a new attenuation vehicle (Utility-2) was activated for the City of Grand Rapids Fire Department for use in downtown freeway crash scenes. An inactive City of Grand Rapids vehicle was painted red and outfitted with an attenuator and arrow board. Utility-2 has been used at crash scenes over 80 times, improving first responder and motorist safety.

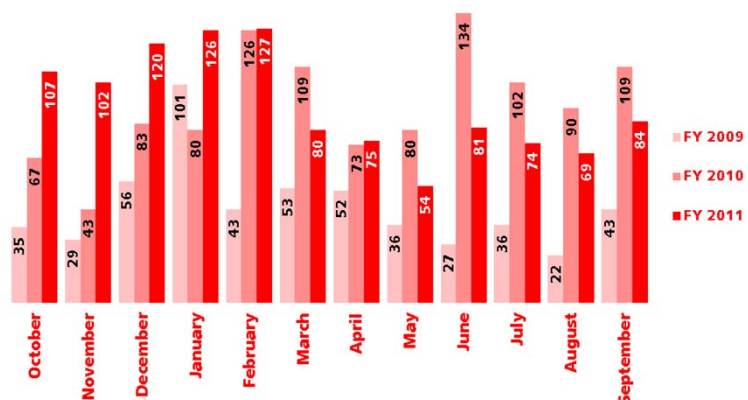
WMTOC operators assist the various agencies through telephone and e-mail communications with media and other stakeholders, DMS messaging, and traffic camera coverage. By communicating with first responders, operators have the most up-to-date information to give to motorists and the general public, which allows them to avoid incident scenes if possible.

The WMTOC communicated with its partners through 2,650 telephone calls (a 3.5 percent increase from 2010) and 2,350 e-mails (a 35 percent increase from 2010) in FY 2011, and provided support for nearly 1,100 incidents.



<i>Event Type</i>	<i>Description</i>	<i>Number of Events</i>
AMBER Alert	The WMTOC alerted motorists via DMS	2
Vehicle Fire	Vehicle fire that required fire personnel	11
Special Event	Concert, cultural event, etc.	11
Road Maintenance/Construction	Work zone, emergency or scheduled maintenance, mobile lane closure, etc.	280
Other	Police or medical incident	8
Congestion	The WMTOC alerted motorists via DMS	553
Disabled	Disabled vehicle	356
Debris	Car bumper, tire retread, etc., in the roadway	24
Crash	Vehicle collision	591
Abandoned	Abandoned vehicle	114
Weather	The WMTOC alerted motorists via DMS	120

Unplanned Incidents Per Month



Planned Event Management

INFORMING MOTORISTS OF WORK ZONE ACTIVITIES AND SPECIAL EVENTS

Key 2011 Accomplishments:

- Travel time and real-time construction messaging was provided on portable message signs for projects outside the Grand Rapids area
- A monthly construction project map was introduced to the performance measure report

Monthly Construction Map

In order to coordinate the 2011 state, county, and city construction projects, a joint meeting was held before the beginning of the construction season, which resulted in a comprehensive map of the Grand Rapids area that was included with the monthly WMTOC performance measure report. The map showed the coordinating agency, location, traffic impact, and DMS used for each project. By utilizing the information received from the various agencies, WMTOC operators were able to provide comprehensive, up-to-date travel information to motorists and the general public. Archived performance measure reports can be found at www.michigan.gov/mdot under the "Roads and Travel" section.

Bridge Construction Projects

The 2011 Grand Rapids-area construction season included several bridge rehabilitation and replacement projects.

Due to the number of work zones and nightly and weekend lane closures, the ITS system in Grand Rapids played an important part in providing timely information to motorists.

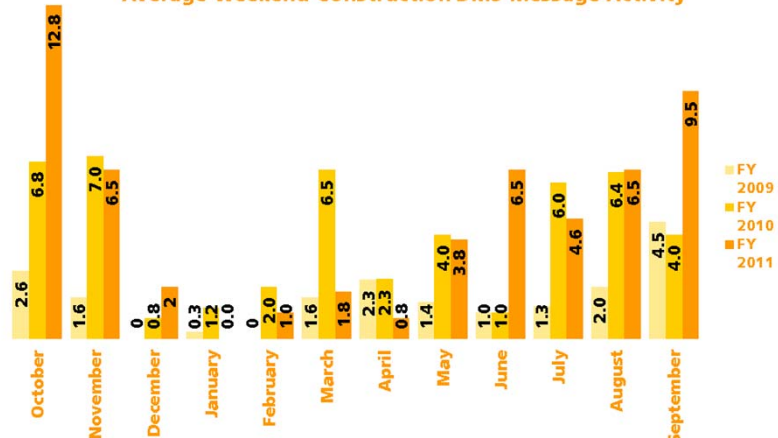
The Mi Drive Web site provided construction lane closure information throughout the construction season, giving important travel information to the general public before they even left for their destination.

WMTOC operations provided support, through travel times and closure messages on portable message signs, for a freeway rehabilitation project on I-96 near Portland, and for a reconstruction project on US-31 near Hart.



In addition, the WMTOC operators monitored traffic flow and provided DMS messaging to motorists already on the roadway. Through the use of both resources, drivers were able to reduce time spent on the roadway, increasing their safety and reducing fuel consumption.

Average Weekend Construction DMS Message Activity



PLANNED EVENT MANAGEMENT

Special Events

Downtown Grand Rapids, the US-131 and I-196 interchange and the core of the Grand Rapids area ITS system are all in close proximity to each other. Several large venues and events draw crowds to downtown Grand Rapids, including Van Andel Arena, the DeVos Performance Hall, the Festival of the Arts, Celebration on the Grand, July 4th Fireworks, and ArtPrize.

In order to reduce congestion and increase awareness of ramp closures and traffic conditions, TOC operators monitored traffic and provided DMS messaging during the special events noted in the table below. TOC operators also coordinated with law enforcement personnel and event organizers in order to provide the most up-to-date information to motorists.

The WMTOC also provides ITS support, including DMS messaging and traffic camera coverage for reoccurring events, such as Grand Rapids Griffins hockey games and West Michigan Whitecaps baseball games. Motorists can determine their best route to events based on this information, reducing delays.



FY 2011 Special Event Support

Gilda's Laughfest

5/3 Riverbank Run

July 4th Fireworks Display

Coast Guard Festival

28th Street Metro Cruise

Rock the Rapids

Celebration on the Grand
Fireworks Display

ArtPrize

Grand Rapids Griffins

West Michigan Whitecaps

ITS System Maintenance

SUSTAINING A RELIABLE ITS NETWORK

Key 2011 Accomplishments:

- A strategic MVDS calibration program was implemented to improve detector data reliability
- 84 percent average availability was provided for all devices in the ITS network
- An asset management database was implemented for tracking information on ITS devices

Field Equipment Maintenance

The WMTOC relies on the availability of ITS field devices deployed on more than 25 miles of freeway in Kent and Ottawa counties.

A high amount of camera availability allows WMTOC operators to view a greater portion of the Grand Rapids-area roadway, and detect and respond to incidents that may affect motorists.

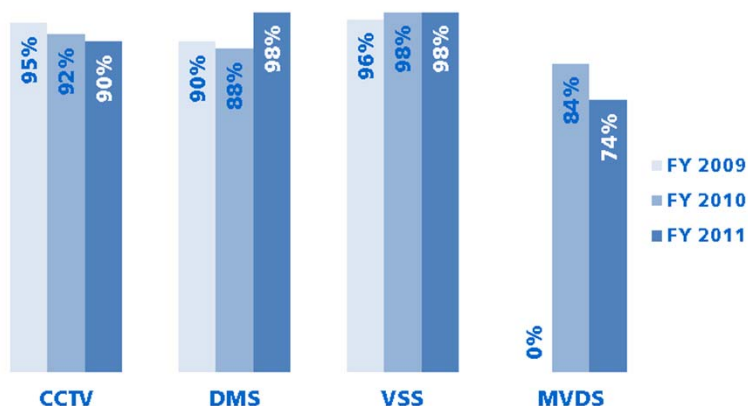
A high DMS availability provides travel time, construction, incident, and congestion messages to a greater number of motorists, resulting in decreased driver delay and increased motorist safety.



A high VSS-availability percentage provides advisory vehicle speed information to a greater number of motorists in the US-131 S-curve, which may reduce the likelihood of crashes.

In total, 11 work orders were created by WMTOC operators for the devices in Grand Haven (maintained under a statewide maintenance contract) and 187 calls were made/received for maintenance on Grand Rapids area devices (maintained by the City of Grand Rapids).

ITS Device Availability



ITS Deployment

ADVANCING THE EXISTING ITS NETWORK

Key 2011 Accomplishments:

- Traffic surveillance cameras were installed on freeways and arterial roadways in the Grand Rapids area to increase visual detection of incidents
- DMS were constructed in strategic locations to provide traffic information to motorists traveling to and from the Grand Rapids area

Multi-Agency ITS Expansion

A multi-agency ITS expansion project began construction in 2009 and is anticipated to be complete in 2012. The project includes 31 traffic surveillance cameras, six DMS, and 31 vehicle detectors. Though the project is not complete, WMTOC operators have access to the cameras and DMS, giving operators more notice of construction, maintenance, and incidents on west Michigan roadways.

While the project provides additional coverage of the freeways, several cameras were also constructed on MDOT arterial roadways, such as M-11 (28th Street) and M-37 (Alpine Avenue).

Grand Rapids Area DMS

During 2011, seven DMS were constructed on I-196, I-96 and M-6 in Allegan and Kent counties, all of which are displaying travel times. The DMS in Kent County display metro-area travel-time information, as well as travel information for motorists leaving Grand Rapids for surrounding locales. Two additional DMS are currently planned for the east end of M-6.



Number of WMTOC ITS Field Devices

